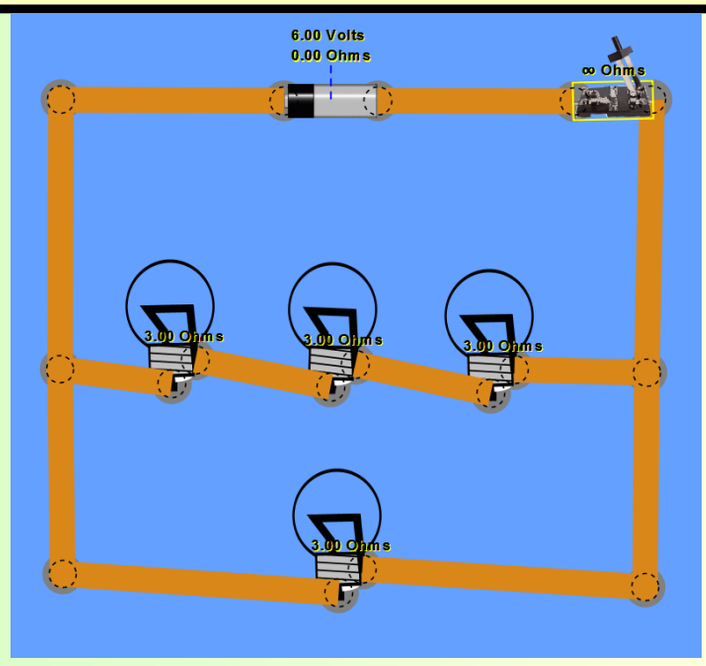
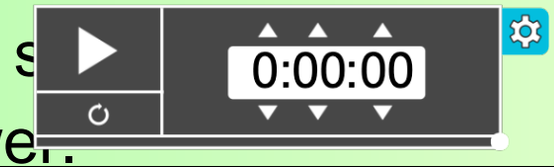
Electrical circuits	**Kirchoff's laws and circuits**

Learning objectives	**MUST (6)**	Recall Kirchoff's first law and the rules for series and parallel circuits
	SHOULD (7)	Be able to state Kirchoff's second law
	COULD (8/9)	Apply the laws to circuits

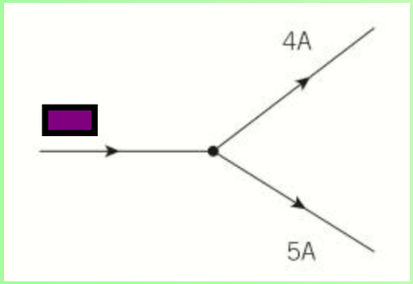
STARTER: Think about your circuits work in GCSE. How many of the rules can you remember? Think about parallel and series circuits.



EXTENSION: The four bulbs are identical and have resistances of 3Ω. When the switch is closed, will they all shine at the s
brightness? Explain your answer.



Electrical circuits	**Kirchoff's Laws in circuits**
MUST (6)	Recall Kirchoff's First Law and the rules for series and parallel circuits



What were the rules for series and parallel circuits?

0:05:00

	Current	**Potential difference**
Series circuit		
Parallel circuit		

Electrical circuits	**Kirchoff's laws in circuits**

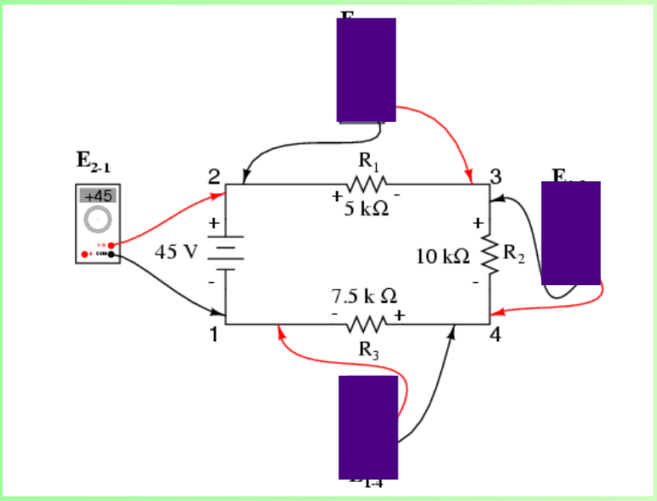
SHOULD (7)	Be able to state Kirchoff's Second Law

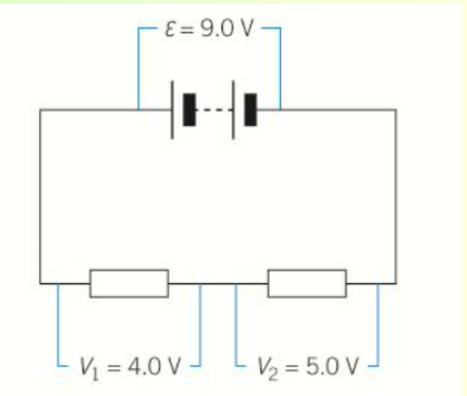
Kirchoff's Second Law:

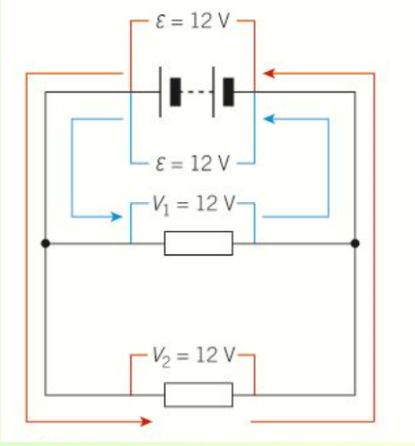
$$\Sigma\varepsilon = \Sigma V$$ around a closed loop

sum of emf — sum of pd

Can we relate this to energy transfers? Recall the meaning of emf and pd.

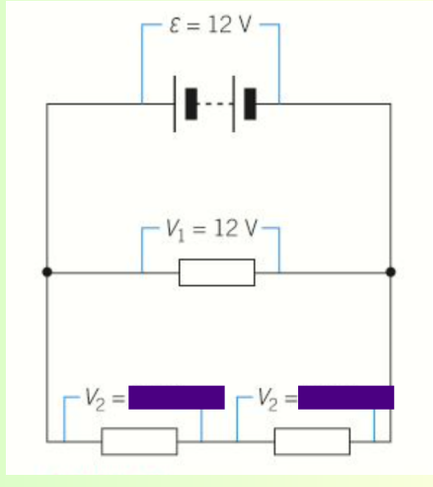






More than one closed loop - applies to **each** loop separately.

What about components in series on one branch of a parallel circuit?



Electrical circuits	**Kirchoff's laws and circuits**

Learning objectives	**MUST (6)**	Recall Kirchoff's first law and the rules for series and parallel circuits
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PLENARY: Look at the circuit. How many different changes could you think of to make bulb A dimmer?